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Early Identification of mutation carriers by echodoppler and TDI in familial Hypertrophic Cardiomyopathy

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Aims: Some studies suggested that abnormal diastolic dysfunction was an early manifestation of Hypertrophic Cardiomyopathy (HCM) and that Tissue Doppler Imaging (TDI) was able to correctly identify mutation carriers before the development of hypertrophy. Data are however limited and still controversial. We therefore performed a systematic analysis of Echocardiography, TDI and ECG in familial HCM to identify predictive parameters for genetic status.

Methods and Results: We recruited 120 adults spread out in three groups: HCM patients with hypertrophy (LVH+, n=48), mutation carriers without hypertrophy (LVH-/G+, n=24), normal control subjects (n=48). Several parameters were significantly different in G+/LVH- as compared to controls, including septal Ea peak velocity. Multivariate logistic regression identified three Echographic/TDI independent predictors for genetic status in LVH-free subjects: the inter-ventricular/left posterior wall (IVS/LPW) ratio, the relative wall thickness (RWT) and the septal E/Ea ratio. An Echo/TDI score determined after ROC analysis, showed 67% sensitivity and 96% specificity for the identification of mutation carriers. In comparison, sensitivity and specificity of septal Ea peak velocity (<13 cm/s) were 63% and 69% respectively. Major ECG abnormalities were not correlated with the Echo/TDI score and sensitivity of ECG was only 33%.

Conclusion: Although DTI velocities alone were not reliable enough to identify LVH-free mutation carriers in HCM, a new Echo/TDI score can achieve preclinical diagnosis with high accuracy. Abnormal LV remodeling, and not only functional abnormalities, might be an early manifestation of HCM in human.

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Heliported ECMO for cardiogenic shock expands cardiac assist surgical programs

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Objectives: ECMO is an effective technique to provide emergency mechanical circulatory assistance for patients with cardiogenic shock refractory to conventional medical therapies. For patients outside our institution we create a Heliported Remote Cardiac Assist unit to implant the ECMO. Our study was undertaken to evaluate the feasibility of the procedure and the results of our experience.

Methods: Between March 2006 and June 2008 38 consecutive patients in acute cardiogenic shock were implanted with percutaneous ECMO by our heliported team.

Results: Mean distance from our ICU was 42 miles (1-143). Maximal time limit between phone call and implantation was 90 min. Mean LVEF evaluated by TTE was $19 \pm 5\%$. Indications were fulminant myocarditis, pharmacologic suicide attempt, acute myocardial infarction, post-partum cardiomyopathy, end-stage dilated cardiomyopathy. They received a percutaneous veno-arterial femoral ECMO with immediate reperfusion of the limb. Seventeen patients (45%) were successfully weaned from ECMO after 9.4 ± 8.7 days. Four patients (11%) were transplanted. One patient (3%) was switched to a left ventricular assist device and successfully transplanted. Twenty-one patients (55%) survived to hospital discharge.

Conclusions: The Heliported Cardiac Remote Assist unit allowed the emergent implant of ECMO support and could rescue 55% of otherwise lethal cardiogenic shock patients in remote institutions.

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Analysis of TAZ (tafazzin) and LDB3 (LIM domain-binding3/Cypher/ZASP) genes in Left ventricular non compaction

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Background: Left ventricular non compaction (LVNC) is a recently identified cardiomyopathy, characterized by an excessively prominent trabecular meshwork and deep intertrabecular recesses. Some genes have been described as responsible for LVNC, including TAZ and LDB3, but the precise prevalence of these genes and the impact of mutation screening in clinical practice are poorly understood.

Objective: To assess the prevalence of mutations in TAZ (tafazzin, Xq28) and LDB3 (LIM domain-binding3/Cypher/ZASP, 10q23.2) genes in a large cohort of patients with LVNC, whatever the familial context.

Methods: DNA was extracted from a population of 59 consecutive patients with a definitive diagnosis of LVNC (Echo core lab), from the French registry of LVNC. Direct sequencing of exons and intron-exon boundaries was performed with ABI Prism 3100 Genetic Analyzer (Applied Biosystems). The suspected mutations were tested in a control population (>240 chromosomes); segregation within the families were analysed when available; evolutive conservation among various species were analysed by multiple alignment.

Results: We identified two new missense mutations in the TAZ gene (Phe128Ser and Met155Val) in two index male patients. No mutation was observed in the LDB3 gene, but two new genetic polymorphisms. The prevalence of TAZ mutations was 3% (2/59) and 0% for LDB3.

Conclusion: Mutations in TAZ gene were not unfrequent in LVNC whereas no mutation was observed in LDB3 gene. These findings may have impact for LVNC mutation screening strategy in clinical practice, and also for genetic counselling as TAZ mutations are associated with X-linked inheritance.

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Chronic obstructive pulmonary disease: the new deal for b-blocker prescription in chronic heart failure

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Background: The recent European Guidelines for the treatment of CHF 2008 underlined that the majority of patient with CHF and COPD can safely tolerate β -blocker therapy.

Aims: The IMPACT-RECO program III analysed the impact of NYHA class and of comorbidities on therapeutic management of French outpatients with stable CHF and left ventricular ejection fraction (LVEF) < 40%.

Methods: This survey was carried out from March 2007 to December 2007 among randomly selected French private cardiologists. 1574 patients with CHF and LVEF < 40% were included. Key demographics including comorbidities such as asthma and COPD, as well as ongoing medical treatment of CHF were collected. Physicians were asked about reasons for not prescribing β -blockers.

Results: Mean age was 71 ± 11 years, 75% of the patients were men, 34% were in NYHA class III-IV, 54% had coronary artery disease, 30% atrial fibrillation and the mean LVEF was $34 \pm 7\%$. 78.3% of the patients received a β -blocker, and asthma or BPCO were reported in 13.7%. 341 patients were